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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 09/504,813 | 02/16/2000 | Shuji Goto | P99,2486 | 6161 |

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EXAMINER

CREPEAU, JONATHAN

| ART UNIT | PAPER NUMBER |
|----------|--------------|
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1745

DATE MAILED: 03/07/2002

9

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/504,813

Applicant(s)

GOTO ET AL.

Examiner

Jonathan S. Crepeau

Art Unit

1745

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 15 November 2001.
- 2a) ☒ This action is FINAL. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-8 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-8 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

Response to Amendment

1. This Office action addresses claims 1-8. The claims remain rejected for the reasons of record. Accordingly, this action is made final.

Claim Rejections - 35 USC § 103

2. Claims 1-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Narang et al (U.S. Patent 6,168,885).

In Figure 1, the reference generally teaches a process for making a battery comprising the steps of coating a negative electrode with electrolyte (26), coating a positive electrode with electrolyte (36), and laminating the two electrode/electrolyte sheets together under heat (42) so as to form a single, continuous electrolyte. In column 10, lines 42-55, the reference teaches that the solid polymer electrolyte contains a plasticizer (swelling solvent). In column 11, lines 4-12, it is further taught that the electrolyte is gelled.

The reference does not expressly teach that the electrode/electrolyte sheets are wound in the lengthwise direction of the sheets (i.e., that the laminate is spirally-wound), that the laminate is packaged in a packaging film, or that terminals are welded to the electrodes.

However, the invention as a whole would have been obvious to one of ordinary skill in the art at the time the invention was made because the artisan would be motivated to incorporate each of these features/steps into the battery of Narang et al. It is first noted that Narang et al. teach in column 3, line 17 that "[o]ften, the various cells are spiral wound before being provided

with a protective coating.” Although this teaching appears in the discussion of the prior art, it is still considered to give the artisan sufficient motivation to make the cell of the reference a spirally-wound cell, since the spirally-wound design is known to increase the energy density of a battery by allowing a greater amount of active material in a particular volume. Accordingly, this limitation is not considered to distinguish over the reference.

Regarding the limitation that the laminate is packaged in a packaging film, the reference discloses in column 11, line 11 that “[s]ealing step 44 and charging step 46 may be conventional.” Therefore, since the step of sealing a battery cell in a packaging film is conventional in the lithium-polymer battery art and provides advantages such as good sealing and light weight, the artisan would be motivated to use such a film to carry out the sealing step of the reference.

Regarding the limitation that terminals are welded to the electrodes, this is a conventional configuration and must be present in order to obtain a workable battery. Accordingly, this limitation is also not considered to distinguish over the reference.

Response to Arguments

Applicant’s arguments filed November 15, 2001 have been fully considered but they are not persuasive. Applicants assert that Narang et al. teach away from integrating the positive and negative electrode to form a continuous shape because they teach in column 3, lines 18-20 to use separators between electrodes of batteries. However, it is noted that this teaching occurs during a discussion of the background art in Narang et al. The actual invention of Narang et al. is directed to polymer electrolytes, as set forth above, and not to conventional microporous

separators containing liquid electrolytes. If anything, Narang's disclosure of porous separators in the background art section supports the Examiner's position because Narang's invention is an improvement over such separators and therefore could be said to teach away from using them. The Examiner respectfully disagrees with Applicants' assertion that "[t]he feature of directly joining the two electrodes in the present invention is novel and unobvious because it is not taught, anticipated, or rendered obvious by Narang et al." As set forth above, Narang et al. clearly disclose this feature, insofar as the electrodes are directly joined via the polymer electrolyte layers.

Additionally, Applicants assert that in regard to heating the polymer, "in the present invention, on the other hand, the polymer electrolyte has already dried before. Therefore, Narang et al teaches away from the present invention for this additional reason." The Examiner notes that instant claim 7 does recite a heat treatment step, but the claim does not recite or suggest any "drying" of the polymer. Accordingly, the arguments directed to this feature are not believed to be commensurate in scope with the claimed invention.

Conclusion

3. THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after

the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jonathan Crepeau whose telephone number is (703) 305-0051. The examiner can normally be reached Monday-Friday from 9:30 AM - 6:00 PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gabrielle Brouillette, can be reached at (703) 308-0756. The phone number for the organization where this application or proceeding is assigned is (703) 305-5900. Additionally, documents may be faxed to (703) 305-5408 or (703) 305-5433.

Any inquiry of general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.

JSC

March 4, 2002


GABRIELLE BROUILLETTE
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 1700